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EXAMINER

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2157

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/539,026

Applicant(s)

VAN BUSKIRK ET AL.

Examiner

Hussein A El-chanti

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

1. This action is responsive to amendment received on Feb. 9, 2004. Claims 7 and 35 were amended. Claims 1-54 are pending examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-8, 10, 12-15, 18, 19, 21, 22, 24-32, 36-39, 42-46 and 48-53 are rejected under 35 U.S.C. 102(e) as being anticipated by Ludwig et al., U.S. Patent No. 6,237,025 (referred to hereafter as Ludwig).

As to claim 1, Ludwig teaches a computer readable-medium having computer-executable instructions for communicating between an application and a multipoint processing mode having at least one audio processor module for processing audio data in a multipoint conference and at least one video processor module for processing video data in a multipoint conference, the computer-executable instructions (see col. 5 lines 20-27 and col. 4 lines 57-67) performing the step of:

exposing at least one interface by the multipoint processing module to receive a request from the application to command the multipoint processing module to

modify its default operation to alter at least one attribute of at least one of the audio processor module and video processor module (see col. 10 lines 48-60).

As to claim 2, Ludwig teaches the computer-readable medium of claim 1 wherein said at least one interface comprises an audio interface, the application using said audio interface to request the multipoint processing module to change a routing of at least one audio input stream towards at least one audio output stream (see col. 10 lines 60-67 and col. 20 lines 40-47).

As to claim 3, Ludwig teaches the computer-readable medium of claim 2 wherein the request is selected from the group consisting of:

- a command to retrieve an audio crossbar topology, the audio crossbar topology indicating how a set of audio input streams is being routed to a set of audio output streams (see col. 14 lines 11-47);

- a command to change the audio crossbar topology to indicate to the multipoint processing module how the set of audio input streams should be routed to a set of audio output streams (see col. 21 lines 55-63, user can add additional participants to the conference);

- a command to retrieve a value of an audio crossbar control parameter (see col. 21 lines 55-63);

- a command to set a value of an audio crossbar control parameter (see col. 16 lines 31-39);

- a command to retrieve a minimum value, a maximum value, and a default value for an audio crossbar control parameter (see col. 23 lines 7-10 and col. 25 lines

13-40, where "idle" is default value, minimum of 1 connection is required and a maximum of four);

a command to retrieve a mixing capability and a transcoding capability of the audio crossbar (see col. 12 lines 59-col. 13 lines 9); and

a command to retrieve an audio level of a list of audio input streams (see col. 23 lines 37-47).

As to claim 4, Ludwig teaches the computer-readable medium of claim 1 wherein said at least one interface comprises a video interface, the application using said video interface to request the multipoint processing module to change a routing of at least one video input stream towards at least one video output stream (see col. 10 lines 60-67 and col. 20 lines 40-47).

As to claim 5, Ludwig teaches the computer-readable medium of claim 4 wherein the request is selected from the group consisting of:

a command to retrieve a video crossbar topology, the video crossbar topology indicating how a set of video input streams is being routed to a set of video output streams based on a content of associated audio input streams (see col. 14 lines 11-47);

a command to change the video crossbar topology to indicate to the multipoint processing module how the set of video input streams should be routed to a set of video input streams based on a content of associated audio input streams;

a command to retrieve a value of an audio crossbar control parameter (see col. 21 lines 55-63, user can add additional participants to the conference);

a command to retrieve a value of an video crossbar control parameter
(see col. 21 lines 55-63);

a command to set a value of an video crossbar control parameter (see col.
16 lines 31-39);

a command to retrieve a minimum value, a maximum value, and a default
value for an video crossbar control parameter (see col. 23 lines 7-10 and col. 25 lines
13-40, where "idle" is default value, minimum of 1 connection is required and a
maximum of four);

a command to retrieve a mixing capability and a transcoding capability of
the video crossbar (see col. 12 lines 59-col. 13 lines 9); and

a command to retrieve an audio level of a list of video input streams (see
col. 23 lines 37-47).

As to claim 6, Ludwig teaches the computer-readable medium of claim 2 wherein
said at least one interface comprises a video interface, the application using said video
interface to request the multipoint processing module to change a routing of at least one
video input stream towards at least one video output stream (see col. 10 lines 60-67
and col. 20 lines 40-47).

As to claim 7, Ludwig teaches the computer-readable medium of claim 6 wherein
the request is selected from the group consisting of:

a command to retrieve an audio crossbar topology, the audio crossbar
topology indicating how a set of audio input streams is being routed to a set of audio
output streams (see col. 10 lines 60-67 and col. 20 lines 40-47);

a command to change the audio crossbar topology to indicate to the multipoint processing module how the set of audio input streams should be routed to a set of audio output streams (see col. 21 lines 55-63, user can add additional participants to the conference);

a command to retrieve a value of an audio crossbar control parameter (see col. 16 lines 31-39);

a command to set a value of an audio crossbar control parameter (see col. 16 lines 31-39);

a command to retrieve a minimum value, a maximum value, and a default value for an audio crossbar control parameter (see col. 23 lines 7-10 and col. 25 lines 13-40, where "idle" is default value, minimum of 1 connection is required and a maximum of four);

a command to retrieve a mixing capability and a transcoding capability of the audio crossbar (see col. 12 lines 59-col. 13 lines 9); and

a command to retrieve an audio level of a list of audio input streams (see col. 23 lines 37-47).

the request to route at least one video input stream is selected from the group consisting of:

a command to retrieve a video crossbar topology, the video crossbar topology indicating how a set of video input streams is being routed to a set of video output streams based on a content of associated audio input streams (see col. 10 lines 60-67 and col. 20 lines 40-47);

a command to change the video crossbar topology to indicate to the multipoint processing module how the set of video input streams should be routed to a set of video input streams based on a content of associated audio input streams;
a command to retrieve a value of an audio crossbar control parameter (see col. 21 lines 55-63, user can add additional participants to the conference);

a command to retrieve a value of an video crossbar control parameter (see col. 21 lines 55-63);

a command to set a value of an video crossbar control parameter (see col. 16 lines 31-39);

a command to retrieve a minimum value, a maximum value, and a default value for an video crossbar control parameter (see col. 23 lines 7-10 and col. 25 lines 13-40, where "idle" is default value, minimum of 1 connection is required and a maximum of four);

a command to retrieve a mixing capability and a transcoding capability of the video crossbar (see col. 12 lines 59-col. 13 lines 9); and

a command to retrieve an audio level of a list of video input streams (see col. 23 lines 37-47).

As to claim 8, Ludwig teaches the computer-readable medium of claim 7 wherein said at least one interface further comprises a format control interface, the application using said format control interface to retrieve and set an audio format and a video format, the format control interface comprising:

a command to retrieve a preferred audio and video format for a conference (see col. 18 lines 53-col. 19 lines20);

a command to set the preferred audio and video format for a conference (see col. 18 lines 53-col. 19 lines20 and col. 39 lines 27-40);

a command to retrieve a format structure and configuration capability structure pair of a conference, the format structure and configuration capability structure pair describing an audio and video format supported by the conference (see col. 18 lines 53-col. 19 lines20);

a command to retrieve a number of audio and video format structure and configuration capability structure pairs that are available in a conference (see col. 18 lines 53-col. 19 lines20);

a command to reorder a list of preferred audio formats (see col. 18 lines 53-col. 19 lines20); and

a command to reorder a list of preferred video formats (see col. 18 lines 53-col. 19 lines20).

As to claim 10, Ludwig teaches the computer-readable medium of claim 3 wherein the multipoint processing module disables the command to set a value of an audio crossbar control parameter when a flag is set (see col. 16 lines 32-38, call "Hold being the control flag).

As to claim 12, Ludwig teaches the computer-readable medium of claim 5 wherein the multipoint processing module disables the command to set a value of a video crossbar control parameter when a control flag is set (see col. 16 lines 32-38).

As to claim 13, Ludwig teaches a method to communicate between a media service provider and a multipoint processing module controlling an encoder module and a decoder module for processing video data in a multipoint conference (see col. 5 lines 20-27 and col. 4 lines 57-67), the method comprising the step of:

exposing at least one interface by one of the media service provider component and the multipoint processing module to communicate commands and indications between the media service provider component and the multipoint processing module (see col. 10 lines 48-60).

As to claim 14, Ludwig teaches the method of claim 13 wherein said at least one interface further comprises a pin interface, the multipoint processing module using said pin interface to retrieve a direction and crossbar positional index of one of the audio streams and video streams (see col. 20 lines 40-col. 21 lines 2).

As to claim 15, Ludwig teaches the method of claim 13 wherein said at least one interface further comprises a decoder interface to handle decoder commands, the decoder interface comprising:

a command to complete updating a video frame and display the video frame until commanded to release the video frame (see col. 21 lines 55-64, where the user displays the video frame until call is put on hold or hang up); and

an indication of a video temporal and spatial trade-off of the encoder (see col. 21 lines 55-64 and col. 28 lines 55-col. 29 lines 5 and col. 16 lines 53-62).

As to claim 18, Ludwig teaches the method of claim 13 wherein the multipoint processing module has a video pin, said at least one interface further comprises a bandwidth interface comprising:

- a command to specify an upper limit in bandwidth transmission of the video pin (see col. 32 lines 12-30);

- a command to retrieve the video pin's upper limit in bandwidth transmission (see col. 32 lines 12-30);

- a command to retrieve values of the upper limit in bandwidth transmission with which the video pin may be setup, the values including a minimum value, a maximum value, a default value, and a support value (see col. 32 lines 12-30).

As to claim 19, Ludwig teaches the method of claim 13 wherein the multipoint processing module has a video pin, said at least one interface further comprises a frame rate control interface comprising:

- a command to specify a video frame's average display time to the video pin;

- a command to retrieve the video frame's average display time;

- a command to retrieve values for the video frame's average display time with which the video pin may be setup, the values including a minimum value, a maximum value, a default value, and a support value (see col. 18 lines 19-33).

As to claim 21, Ludwig teaches a multipoint processing accelerator apparatus for transmitting audio and video data over a plurality of channels in a multipoint conference being controlled by an application, the apparatus comprising:

at least one hardware module having a default operation for applying signal processing operations to at least one of the audio and video data (see col. 5 lines 20-27 and col. 4 lines 57-67); and

a minidriver, said minidriver communicating with the application through at least one property set to do one of receiving a command to modify the default operation of the at least one hardware module and sending a command to the application (see col. 10 lines 48-60).

As to claim 22, Ludwig teaches the apparatus of claim 21 wherein at least one property set comprises an audio topology property set (see col. 14 lines 11-47).

As to claim 24, Ludwig teaches the apparatus of claim 21 wherein at least one property set comprises a video topology property set (see col. 10 lines 48-60).

As to claim 25, Ludwig teaches the apparatus of claim 24 wherein the video topology property set comprises:

a property to do one of updating a video crossbar content and retrieving an video crossbar content (see col. 14 lines 11-47 and col. 14 lines 11-47);;

a property to retrieve mixing and transcoding capabilities of a video crossbar (see col. 12 lines 59-col. 13 lines 9);

a property to do one of setting a periodicity of an interrupt service routine and getting a periodicity of an interrupt service routine (see col. 37 lines 2-65 and col. 40 lines 49-56);

a property to do one of setting a time to evaluate whether a speaker is continuing to speak and getting a time to evaluate whether a speaker is continuing to speak (see col. 32 lines 41-64 and col. 16 lines 32-38);

a setting to specify a second time during which a speaker and a video switching process can not be taken over by a second speaker (see col. 37 lines 1-17, user can refuse incoming calls); and

a setting to specify a third time, the third time being the time when a switch is made and when a fast update request is sent to the speaker's system (see col. 37 lines 44-54, user can add additional callers to conference thus adding audio and video input).

As to claim 26, Ludwig teaches the apparatus of claim 21 wherein the at least one property set comprises a decoder property set (see col. 10 lines 48-60).

As to claim 27, Ludwig teaches the apparatus of claim 26 wherein the decoder property comprises:

a property to specify that a video frame update be completed and a video frame be displayed until receiving a release signal (see col. 21 lines 55-64, where the user displays the video frame until call is put on hold or hang up); and

a property to indicate a video temporal and spatial trade-off of an encoder (see col. 32 lines 12-30).

As to claim 28, Ludwig teaches the apparatus of claim 21 wherein the at least one property set comprises a video encoder send property set (see fig. 31B and its corresponding illustration "compress/decompress").

As to claim 29, Ludwig teaches the apparatus of claim 28 wherein the at least one hardware module comprises a video encoder, the video encoder send property set comprises:

a property to signal to the application that it needs to send a command to the video encoder (see col. 21 lines 55-64, where the user can resume or hold a call, sending a command to the video encoder to resume or hold video encoding).

As to claim 30, Ludwig teaches the apparatus of claim 21 wherein the at least one property set comprises a stream topology property set (see col. 23 lines 37-47).

As to claim 31, Ludwig teaches the apparatus of claim 30 wherein the stream topology property set comprises:

a property to retrieve a direction and crossbar positional index of a stream (see col. 23 lines 37-47).

As to claim 32, Ludwig teaches the apparatus of claim 21 wherein the at least one property set comprises a video encoder property set (see fig. 31B and its corresponding illustration "compress/decompress").

As to claim 36, Ludwig teaches the apparatus of claim 21 wherein the at least one property set comprises a bandwidth property set (see col. 32 lines 12-30).

As to claim 37, Ludwig teaches the apparatus of claim 36 wherein the bandwidth property set comprises:

a property to do one of specifying an upper limit in bandwidth transmission to a video output pin and supplying the upper limit bandwidth transmission of the video output pin to a media service provider (see col. 32 lines 12-30).

As to claim 38, Ludwig teaches the apparatus of claim 21 wherein the at least one property set comprises a frame rate property set (see col. 18 lines 19-33).

As to claim 39, Ludwig teaches the apparatus of claim 38 wherein the frame rate property set comprises:

a property to do one of specifying a video frame's average display time to a video output pin and supplying the video frame average display time to a media service provider component (see col. 18 lines 19-33).

As to claim 42, Ludwig teaches a computer readable medium having computer-executable instructions for bridging a plurality of multicast conferences, each of the plurality of multicast conferences having at least one client, the computer-executable instructions performing the steps of:

receiving a first call from one of the at least one client to join a conference (see col. 35 lines 65-col. 36 lines 5);

looking for the conference (see col. 36 lines 1-15); and

joining the one of the at least one client into the conference, the step of joining comprising (see col. 36 lines 1-15):

creating a second call to call the conference (see col. 37 lines 1-65);

creating at least one multicast bridging terminal (see col. 37 lines 1-65);

selecting one of at least one audio stream and at least one video stream into the at least one multicast bridging terminal (see col. 36 lines 1-15);

connecting the second call (see col. 37 lines 1-65); and

answering the first call (see col. 37 lines 1-65).

As to claim 43, Ludwig teaches the computer readable medium of claim 42 wherein the at least one multicast bridging terminal comprises one of at least one audio bridge terminal and at least one video bridge terminal (see col. 37 lines 1-65).

As to claim 44, Ludwig teaches the computer readable medium of claim 43 wherein the at least one multicast bridging terminal comprises:

a sink module to receive at least one input stream from one of the first call and one of the second call (see col. 37 lines 1-65);

a source module to send at least one output stream to one of the first call and one of the second call (see col. 37 lines 1-65); and

an interface to send one of at least one input stream to the source module (see col. 37 lines 1-65).

As to claim 45, Ludwig teaches the computer readable medium of claim 44 wherein a data format of the at least one input stream and a data format of the at least one output stream is identical (see col. 31 lines 1-12).

As to claim 46, Ludwig teaches the computer readable medium of claim 45 wherein the at least one input stream is an audio stream and the at least one output stream is an audio stream, the data format being PCM linear at 16 bits per sample at 8 KHz (see col. 6 lines 53-61).

As to claim 48, Ludwig teaches the computer readable medium of claim 44 wherein the sink filter uses a memory allocator in an output pin of an upstream module, the upstream module sending at least one input stream to the sink filter (see col. 31 lines 45-col. 32 lines 2).

As to claim 49, Ludwig teaches the computer readable medium of claim 44 wherein the sink module is an audio sink module and the at least one input stream is at least input audio stream, the computer executable instructions further comprising the step of time-stamping, by the audio sink module, audio samples in the at least one audio input stream with a time of a clock of the audio sink module (see col. 39 lines 41-50, the user creates a timestamp by tagging the stream).

As to claim 50, Ludwig teaches the computer readable medium of claim 49 further comprising the step of updating the clock when a discontinuity flag is set (see col. 39 lines 41-50).

As to claim 51, Ludwig teaches the computer readable medium of claim 50 wherein the discontinuity flag is set when a first sample of a talk spurt is delivered to the audio sink filter (see col. 39 lines 41-50).

As to claim 52, Ludwig teaches the computer readable medium of claim 50 further comprising the step of:

if the data in the at least one input stream is continuous data, increasing the clock by a first time, the first time based on an amount of data passed through the audio sink module; and

if there is a silence period in the at least one input stream, adjusting the clock by a second time, the second time being the length of time of the silence period (see col. 29 lines 31-col. 30 lines 20).

As to claim 53, Ludwig teaches the computer readable medium of claim 45 wherein the data input stream is in frames of a first size and the data in the output

stream is in frames of a second size, the computer readable instructions further comprising the steps of:

calling, by the sink module, the interface to send the data samples of the first size to the source filter;

if the first size is equal to the second size, sending the data in the input stream directly down stream; and

if the first size is not equal to the second size, constructing new data frames of the second size, transforming the data samples of the first size into data samples of the second size, copying the data samples of the second size into the new data frames, and sending the new data frames down stream (see col. 32 lines 31-col. 33 lines 20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9, 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig in view of Roy, U.S. Patent No. 6,600,725.

As to claim 9, Ludwig teaches the computer-readable medium of claim 3 wherein the audio crossbar control parameter is selected from a group of audio crossbar control parameters; the group comprising:

a setting to specify a periodicity of an interrupt service routine (see col. 37 lines 2-65 and col. 40 lines 49-56);

a setting to specify a maximum number of mixed input signals (see claim 7);

a setting to enable and disable silence compression (see col. 32 lines 41-64 and col. 16 lines 32-38); and

a setting to enable and disable automatic gain control (see col. 16 lines 32-38 and col. 17 lines 36-44).

Ludwig doesn't explicitly teach the limitation "a setting to enable and disable silence detection ". However, Roy teaches a multimedia conferencing apparatus that have a setting to enable and disable silence detection (see col. 7 lines 21-37).

It would have been obvious for one of the ordinary skill in the art at the time of the invention to modify Ludwig in view of a setting to enable and disable silence detection as in Roy. One would be motivated to include a setting to enable and disable silence detection in Ludwig because doing so would allow the user to determine whether a speaker continues to speak in case of a malfunction of the user's sound card or speaker.

As to claim 11, Ludwig teaches the computer-readable medium of claim 5 wherein the video crossbar control parameter is selected from a group of video crossbar control parameters, the group comprising a setting to specify a second time during which a speaker and a video switching process can not be taken over by a second speaker (see col. 37 lines 1-17, user can refuse incoming calls) and a setting to specify

a third time, the third time being the time when a switch is made and when a fast update request is sent to the speaker's system (see col. 37 lines 44-54, user can add additional callers to conference thus adding audio and video input).

Ludwig doesn't explicitly teach the limitation "a setting to specify a first time to evaluate whether a speaker is continuing to speak ". However, Roy teaches a multimedia conferencing apparatus that have a setting to specify a first time to evaluate whether a speaker is continuing to speak (see col. 7 lines 21-37);

It would have been obvious for one of the ordinary skill in the art at the time of the invention to modify Ludwig in view of a setting to specify a first time to evaluate whether a speaker is continuing to speak as in Roy. One would be motivated to include a setting to specify a first time to evaluate whether a speaker is continuing to speak in Ludwig because doing so would allow the user to determine whether a speaker continues to speak in case of a malfunction of the user's sound card or speaker.

As to claim 23, Ludwig teaches the apparatus according to claim 22 wherein the audio topology property set comprises:

- a property to do one of updating an audio crossbar content and retrieving an audio crossbar content (see col. 21 lines 55-64);

- a property to retrieve mixing and transcoding capabilities of an audio crossbar (see col. 12 lines 59-col. 13 lines 9);

- a property to do one of setting a periodicity of an interrupt service routine and getting a periodicity of an interrupt service routine (see col. 37 lines 2-65 and col. 40 lines 49-56);

a property to do one of setting a maximum number of mixed input signals and getting a maximum number of mixed input signals (see claim 7);

a property to do one of enabling automatic gain control and disabling automatic gain control (see col. 16 lines 32-38 and col. 17 lines 36-44); and

a property to retrieve a value of an audio level of a list of audio input streams (see col. 23 lines 37-47).

Ludwig doesn't explicitly teach the limitation "a property to do one of enable and disable silence detection". However, Roy teaches a multimedia conferencing apparatus that have a property to enable and disable silence detection (see col. 7 lines 21-37).

It would have been obvious for one of the ordinary skill in the art at the time of the invention to modify Ludwig in view of a setting to enable and disable silence detection as in Roy. One would be motivated to include a setting to enable and disable silence detection in Ludwig because doing so would allow the user to determine whether a speaker continues to speak in case of a malfunction of the user's sound card or speaker.

4. Claims 16, 17 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig in view of Salesky et al., U.S. Patent No. 6,343,313 (referred to hereafter as Salesky).

As to claim 16, Ludwig teaches a method to communicate between a media service provider and a multipoint processing module controlling an encoder module and a decoder module for processing video data in a multipoint conference the method comprising the step exposing at least one interface by one of the media service provider

component and the multipoint processing module to communicate commands and indications between the media service provider component and the multipoint processing module (see the rejection of claim 13) and a command to set a relative tradeoff between a high spatial resolution and a high frame rate (see col. 16 lines 53-63).

Ludwig does not explicitly teach the limitations "a command to enter a fast-update mode, a command to perform a fast update of a group of blocks, a command to perform a fast update of macroblock, a command to use sync for every group of blocks and an indication that a set of macroblocks has been received with errors and has been treated as not coded.

However Salesky teaches a computer conferencing system including an interface comprising:

- a command to enter a fast-update mode;
- a command to perform a fast update of a group of blocks;
- a command to perform a fast update of macroblock;
- a command to use sync for every group of blocks (see Fig. 4A-E and its corresponding illustration and col. 12 lines 17-67);
- an indication that a set of macroblocks has been received with errors and has been treated as not coded (see col. 20 lines 63-col. 21 lines 14).

It would have been obvious for one of the ordinary skill in the art at the time of the invention to modify Ludwig in view of an encoder interface as in Salesky. One would be motivated to modify Ludwig in view of using an encoder interface comprising a

command to perform a fast update of macroblock, a command to use sync for every group of blocks and an indication that a set of macroblocks has been received with errors and has been treated as not coded because doing so would allow the user to obtain real time and continuous video transmission and display through the continuous update of the blocks of the received signal.

As to claim 17, Saleski teaches a network interface comprising:

- a command to inform the video pin of error channel conditions;

- a command to supply the media service provider component the error channel conditions;

- a command to retrieve the values of the error channel conditions with which the video pin may be setup, the values including a minimum value, a maximum value, a default value, and a support value;

- a command to inform the video pin a channel packet loss rate;

- a command to supply the media service provider component the channel packet loss rate; and

- a command to retrieve values of the channel packet loss rate with which the video pin may be setup, the values including a minimum value, a maximum value, a default value, and a support value (see col. 20 lines 63-col. 21 lines 14).

As to claim 33, Saleski teaches the apparatus of claim 32 wherein the video encoder property set comprises:

- a property to command a video output stream to enter a fast update picture mode;

a property to command the video output stream to perform a fast update of a group of blocks;

a property to command the video output stream a fast update of a macroblock;

a property to command the video output stream to use sync for every group of blocks (see Fig. 4A-E and its corresponding illustration and col. 12 lines 17-67); and

a property to provide an indication that a set of macroblocks has been received with errors and has been treated as not coded (see col. 20 lines 63-col. 21 lines 14).

As to claims 34 and 35, Saleski teaches a network statistics property set comprises:

a property to do one of informing a video output pin of error channel conditions and supplying a media service provider component the error channel conditions; and

a property to do one of informing the video output pin of a channel packet rate loss and supplying the media service provider component the channel packet rate loss (see col. 20 lines 63-col. 21 lines 14, where the error is the loss of packets).

5. Claims 20, 40, 41, 47 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig in view of Falco, U.S. Patent No. 6,606,112 (referred to hereafter as Tucker).

As to claim 20, Ludwig teaches a method to communicate between a media service provider and a multipoint processing module controlling an encoder module and a decoder module for processing video data in a multipoint conference the method comprising the step exposing at least one interface by one of the media service provider component and the multipoint processing module to communicate commands and indications between the media service provider component and the multipoint processing module (see the rejection of claim 13).

Ludwig does not explicitly teach the limitation an RTP packet interface comprising a command to adjust a maximum RTP packet size generated by the video pin, a command to supply the media service provider component the maximum RTP packet size and a command to retrieve values for the maximum RTP packet size with which the video pin may be setup, the values including a minimum value, a maximum value, a default value, and a support value.

However Falco teaches a video conferencing system having an RTP packet interface comprising a command to adjust a maximum RTP packet size generated by the video pin, a command to supply the media service provider component the maximum RTP packet size and a command to retrieve values for the maximum RTP packet size with which the video pin may be setup, the values including a minimum value, a maximum value, a default value, and a support value (see col. 3 lines 13-65).

It would have been obvious for one of the ordinary skill in the art at the time of the invention to modify Ludwig in view of an RTP packet interface as in Falco. One would be motivated to modify Ludwig in view of an RTP packet interface because doing

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so would allow the user receive audio picture in real time by dividing the picture into data packets where the maximum size of packet s transmitted to provide fastest communication possible between two or more communicating parties.

As to claim 40, Falco teaches at least one property set comprises a RTP control property set (see col. 3 lines 13-65).

As to claim 41, Falco teaches the RTP control property set comprises:

a property to do one of retrieving a maximum RTP packet size and setting the maximum RTP packet size (see col. 3 lines 13-65).

As to claim 47, Falco teaches the at least one input stream is a video stream and the at least one output stream is a video stream, the data format being RTP H. 263 (see col. 3 lines 13-65).

As to claim 54, Falco teaches the at least one input stream is at least one input video stream, the video data in the at least one input video stream is in video frames, the video frames containing at least one RTP packet, the computer executable instructions further comprising the steps of:

monitoring the RTP packets for a parameter change, and if the parameter changes:

discarding packets, by the video sink module, until an event occurs; and
resume sending video data down the stream (see col. 3 lines 13-65).

6. Applicant's arguments filed have been fully considered but they are not persuasive.

In the remarks, the applicant argues in substance that; A) Ludwig does not teach a multipoint processing module B) Ludwig does not teach mixing and switching of media streams to allow a user to modify an attribute to change the default operation of the component C) Ludwig does not teach does not teach hardware driver or hardware accelerator D) Ludwig does not teach periodical interrupt routine E) Ludwig does not teach evaluating whether a speaker is continuing to talk F) Ludwig does not teach specifying an upper limit to a video output pin G) Ludwig does not teach silence period in the input stream H) Ludwig does not teach the size of the data frames of the compressed and decompressed files are of different sizes I) Ludwig and Roy do not teach automatic gain control J) Ludwig and Salesky do not teach fast update request of groups of blocks K) Ludwig and Salesky do not teach packet rate loss L) Ludwig and Falco do not teach setting values for RTP packet size

In response to A) Ludwig teaches a software for conferencing where the software receives a plurality of multimedia calls and the user is able to accept multiple calls at a time (see col. 5 lines 20-27 and col. 4 lines 57-67) and therefore Ludwig meets the scope of the claimed limitation "multipoint processing module".

In response to B) Ludwig teaches can cut and paste a region of the received video stream (see col. 14) and therefore Ludwig meets the scope of the claimed limitation "modify an attribute to change the default operation of the component".

In response to C) Ludwig teaches the hardware of the system receives multimedia signals where the hardware performs digital to analog conversion, decompression of received streams and routing of the received streams (see col. 10

lines 48-67), the hardware inherently has a driver or software installed thereon to perform the above mentioned function.

In response to D) Ludwig teaches a method where the user can schedule an interrupt to receive a note to switch the conference from intercom to telephone (see col. 37 lines 2-65 and col. 40 lines 49-56). There is no limitation on the kind of interrupt service routine and therefore Ludwig meets the scope of the claimed limitation "a property to do one of setting a periodicity of an interrupt service routine and getting a periodicity of an interrupt service routine".

In response to E) Ludwig teaches a mute option where the user could mute video and audio input until the resume call button is pressed (see col. 32 lines 41-64 and col. 16 lines 32-38). Also Roy teaches a silence detection to detect whether a speaker is still speaking (see col. 7 lines 21-37).

In response to F) Ludwig teaches WAN switching multiplexer 44 typically creates subchannels whose bandwidth is a multiple of 64 Kbps (i.e., 256 Kbps, 384, 768, etc.) among the T1, T3 or ISDN carriers Inverse multiplexers may be required when using 56 Kbps dedicated or switched services from these carriers where the upper limit of bandwidth is the maximum bandwidth of the subchannel (see col. 10 lines 37-47) and therefore Ludwig meets the scope of the claimed limitation "specify an upper limit in bandwidth transmission".

In response to G) Ludwig teaches muting the input stream until the user resumes the video or audio call (see col. 29 lines 31-col. 30 lines 20) and therefore Ludwig meets the scope of the claimed limitation.

In response H) Ludwig teaches compressing data streams and it is well known in the art that compressed data streams are of smaller size than the uncompressed data streams.

In response I) Ludwig uses Add-on box 800 interface with standard amplifier and equalization circuitry, as well as an adaptive room echo canceler 814 to eliminate echo, minimize feedback and provide enhanced audio performance when using a separate microphone and speaker. In particular, use of adaptive room echo cancelers provides high-quality audio interactions in wide area conferences (see col. 17 lines 10-27).

In response to J) Salesky teaches a method of updating blocks every interval of time by sending the blocks that has been changed (see col. 12 lines 17-67) and therefore Salesky meets the scope of the claimed limitation "a command to perform a fast update of macroblock".

In response to K) Salesky teaches a method of discarding blocks and displaying a video stream with a loss rate. There is no limitation on the kind of loss of packets, whether the packet loss is due to packets being discarded or other reasons and therefore Salesky meets the scope of the claimed limitation "retrieve values of the channel packet loss rate".

In response to L) Ludwig teaches transferring the stream as a compressed stream and then the receiver would uncompress the stream locally (change the size of the packets) and then the stream is processed at the receiver's processor (see col. 32-col. 33).

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

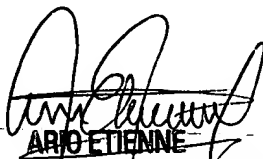
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein A El-chanti whose telephone number is (703)305-4652. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703)308-7562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein El-chanti

April 15, 2004



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